Math 8 Name_____

Summer Review

Date_____ Period____

Evaluate each expression.

1) $(4)(5) - (-4)(-3)$

2) $(|3 - 1|)(5)$

3) $|-4| - (-2)(-4)$

4) $-5 - (-6 - (6)(-5))$

5) $\frac{11}{9} - 4\frac{1}{3} - \left(\left(-2\frac{5}{8}\right) - \left(-\frac{1}{5}\right)\right)$

6) $\frac{1}{4} \times \frac{-2}{\left(-2\frac{4}{7}\right) \times \left(-\frac{4}{3}\right)}$

7) $\left(-1\frac{4}{7}\right) \times 1\frac{2}{7} \times \left(-2\frac{3}{4}\right) \times \frac{2}{5}$

8) $\left(-\frac{19}{10}\right) \times \frac{\frac{1}{3} - (-2)}{-1}$

Simplify each expression.

9) $-6x(9x + 9) + 9x(x + 4)$

10) $-4r(r + 9) + 10(8 + 5r)$

11) $-6(1 + 5m) - 8m(3m + 8)$

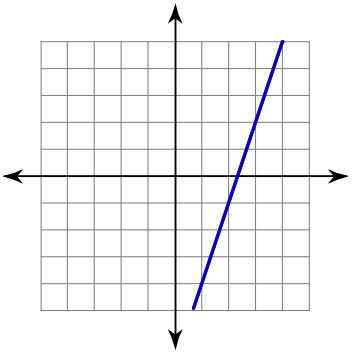
12) $-6n(-9n + 2) + 4n(n + 1)$

13) $1\frac{8}{9}\left(1\frac{5}{9}b - 1\frac{3}{4}\right) + 6$

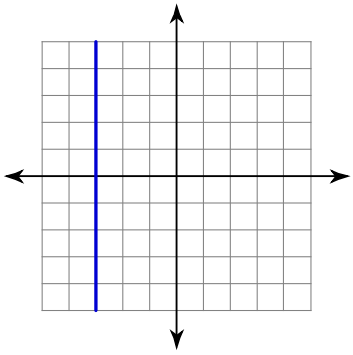
14) $\frac{1}{8} + 3\frac{1}{2}\left(-1\frac{2}{5}n + 1\right)$

Find the slope of each line.

15)



16)



Find the slope of the line through each pair of points.

17) $(20, 18), (-4, 0)$

18) $(8, -2), (-13, -17)$

Find the slope of each line.

19) $y = \frac{4}{3}x - 2$

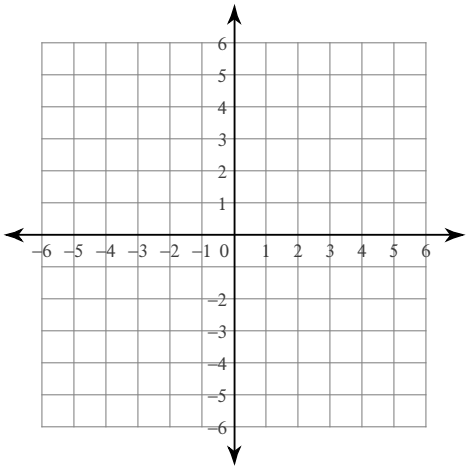
20) $3x - 4y = 4$

21) $3x = -1 + y$

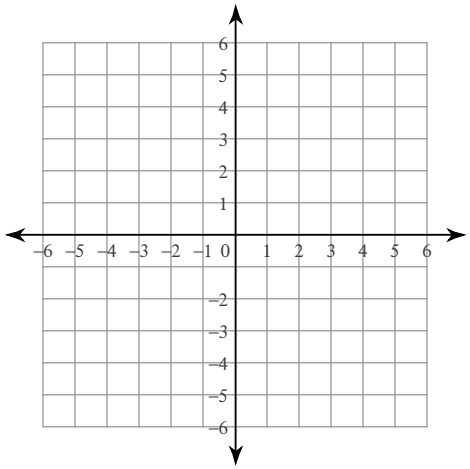
22) $2 = -x - 2y$

Sketch the graph of each line.

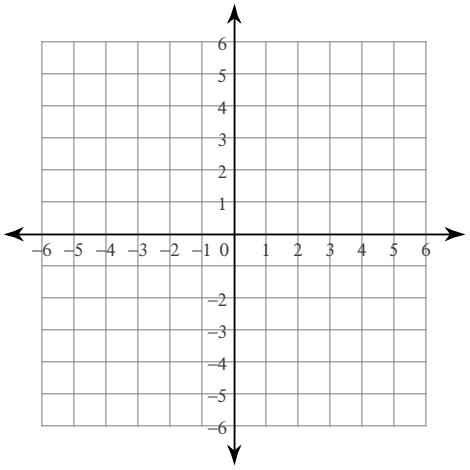
23) $0 = 2y - x$



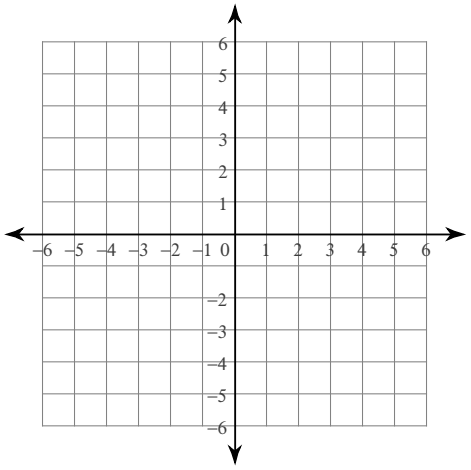
24) $y = 2x + 2$



25) $2x + 5y = 20$

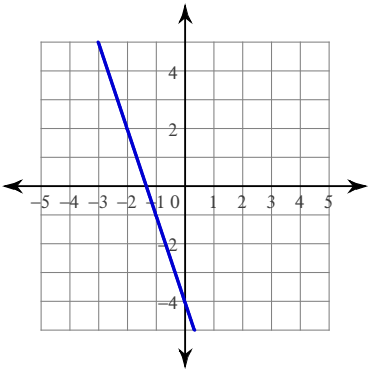


26) x-intercept = 5, y-intercept = 3



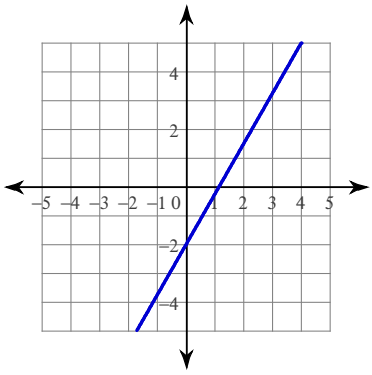
Write the slope-intercept form of the equation of each line.

27)



Write the standard form of the equation of each line.

28)



Write the standard form of the equation of each line given the slope and y-intercept.

29) Slope $= -\frac{1}{5}$, y-intercept $= -1$

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

30) Slope $= \frac{3}{2}$, y-intercept $= 1$

Write the slope-intercept form of the equation of each line.

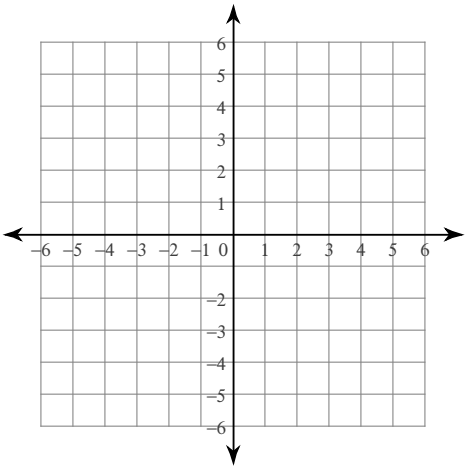
31) $4x = -3y - 12$

Write the slope-intercept form of the equation of the line through the given points.

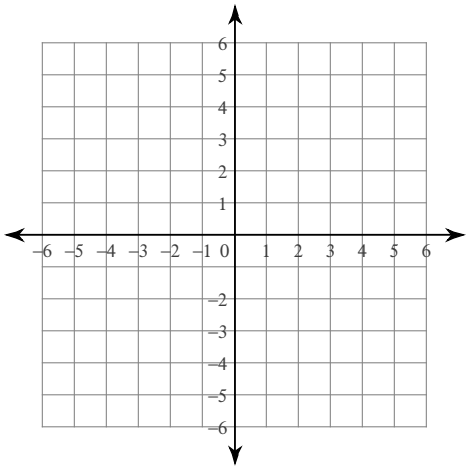
32) through: $(-1, -4)$ and $(-5, -2)$

Sketch the graph of each line.

33) $y = \frac{1}{2}x - 3$



34) $3x + y = -1$



Find the slope of the line through each pair of points.

35) $(13, -1), (-11, -9)$

36) $(0, 19), (-20, 5)$

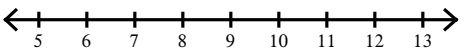
Simplify each expression.

37) $-3\frac{3}{8} - \left(r - \frac{11}{8}\right)$

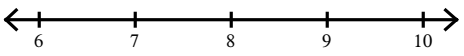
38) $-3\frac{1}{5}x + 9\left(\frac{5}{4}x + 2\frac{2}{5}\right)$

Solve each inequality and graph its solution.

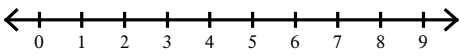
39) $-105 > 3(5 - 5n)$



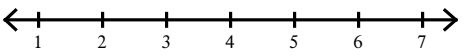
40) $-8(8b + 1) \leq -520$



41) $8(n + 7) > 96$

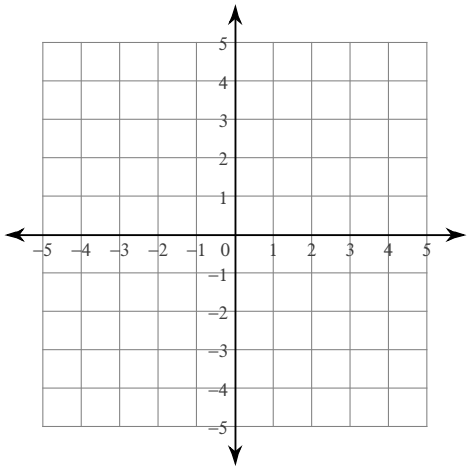


42) $6(8v + 3) + 4 < 262$

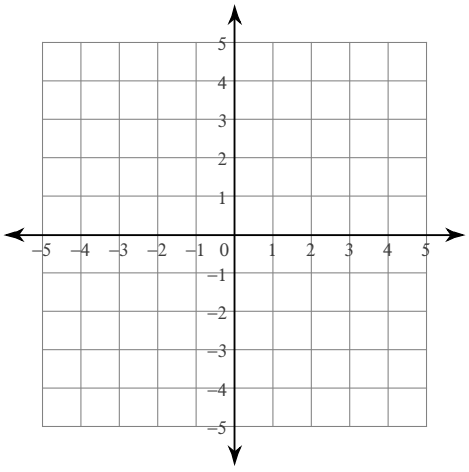


Solve each system by graphing.

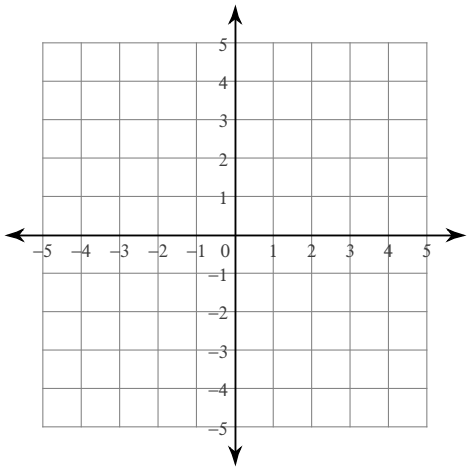
43) $6y = 18 - 2x$
$4 - 2x = -y$



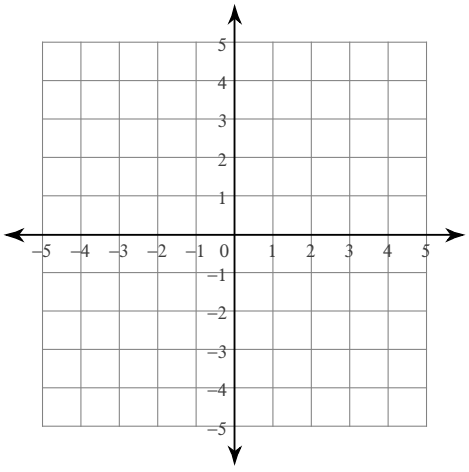
44) $0 = -4 + x$
$5x - 4y - 16 = 0$



45) $-3 = -y - 5x$
$y + 5x - 3 = 0$



46) $-y - 2 = 2x$
$-3 = -y - \frac{1}{3}x$



Solve each system by substitution.

47) $y = 2$
$-x - 5y = -12$

48) $y = -1$
$-4x + 3y = 1$

49) $y = -3$
$-3x + 8y = -9$

50) $-x + 3y = -12$
$y = -4$

51) There are 15 animals in the field. Some are oxen and some are ducks. There are 40 legs in all. How many of each animal are in the field?

52) A class of 187 students went on a field trip. They took 9 vehicles, some vans and some buses. Find the number of vans and the number of buses they took if each van holds 6 students and each bus hold 25 students.

53) All 440 students in the Math Club went on a field trip. Some students rode in cars which hold 4 students each and some students rode in buses which hold 60 students each. How many of each type of vehicle did they use if there were 12 vehicles total?

54) There are 16 animals in the barn. Some are ducks and some are goats. There are 56 legs in all. How many of each animal are there?

Answer each question and round your answer to the nearest whole number.

55) The currency in Saudi Arabia is the Riyal. The exchange rate is approximately \$1 for every 4 Riyals. At this rate, how many Riyals would you get if you exchanged \$2?

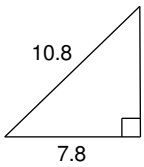
56) The money used in China is called the Yuan. The exchange rate is 8 Yuan for every \$1. Find how many dollars you would receive if you exchanged 24 Yuan.

57) Ashley reduced the size of a rectangle to a height of 3 in. What is the new width if it was originally 9 in tall and 12 in wide?

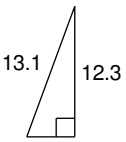
58) A rectangle is 16 in tall and 4 in wide. If it is reduced to a height of 4 in, then how wide will it be?

Find each missing length to the nearest tenth.

59)



60)



61) *a = 12.4, b = ?, c = 13.4*

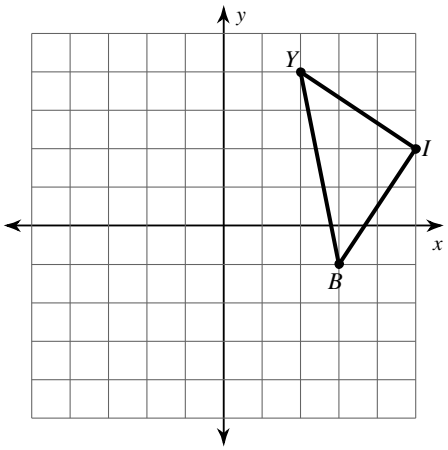
62) *a = ?, b = 3.8, c = 13.8*

63) *a = 5.1, b = ?, c = 8.6*

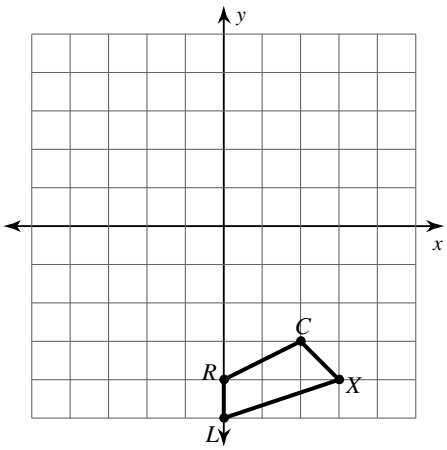
64) *a = 5.6, b = ?, c = 11*

Graph the image of the figure using the transformation given.

65) translation: 5 units left and 3 units down

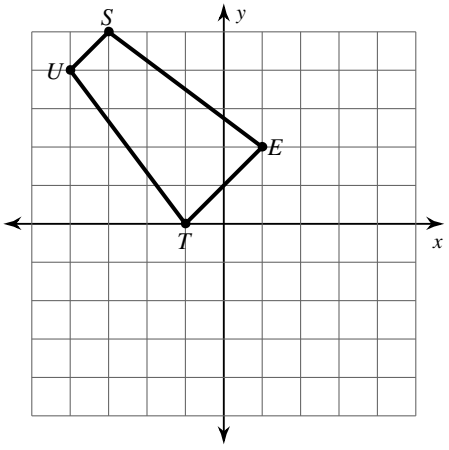


66) rotation 180° about the origin

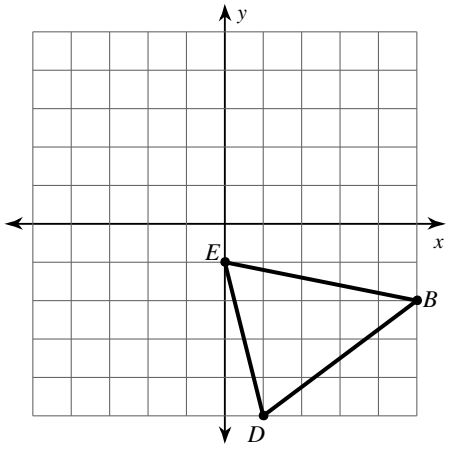


Find the coordinates of the vertices of each figure after the given transformation.

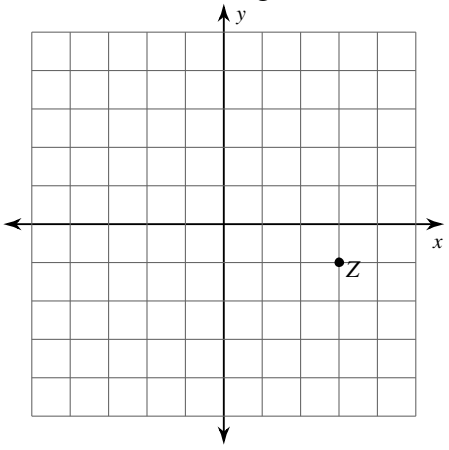
67) translation: 3 units right and 2 units down



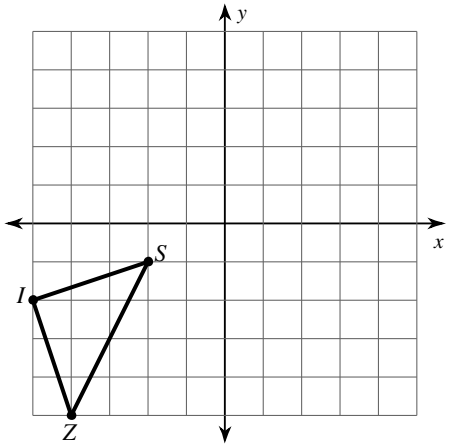
68) translation: 2 units up



69) translation: 1 unit right and 1 unit up



70) reflection across the y-axis



Simplify. Write each answer in scientific notation.

71) $(3 \times 10^{-4})(6.19 \times 10^{-3})$

72) $(6 \times 10^{-4})(3.4 \times 10^{3})$

73) $(2.8 \times 10^{0})(5 \times 10^{5})$

74) $(7 \times 10^{1})(3 \times 10^{-5})$

Write each number in scientific notation.

75) 0.00074

76) 510

Simplify. Your answer should contain only positive exponents.

77) $(-2)^2 \cdot (-2)^3$

78) $7^4 \cdot 7^4$

79) $\dfrac{36}{(-6)^4}$

80) $\dfrac{5^3 \cdot 5^4}{5^4}$

81) $\dfrac{3^4}{3 \cdot (3^4)^4}$

82) $\dfrac{(-3)^2 \cdot ((-3)^2)^2}{(-3)^2}$

83) $\left(\dfrac{2^2 \cdot 2^{-2}}{2}\right)^2$

84) $\dfrac{(4 \cdot 4^3)^3}{4^3}$

85) $\dfrac{(-3)^{-1} \cdot (-3)^{-2}}{((-3)^3)^{-2}}$

86) $\left(\dfrac{(-2)^{-2} \cdot (-2)^3}{(-2)^{-2}}\right)^2$

87) $\left(\dfrac{3a^0b^2 \cdot 4a^{-4}b^4}{a^3b^{-4}}\right)^3$

88) $\dfrac{(-4y^{-2})^2 \cdot -3x^4}{-2y^0}$

89) $\dfrac{-2mn}{-2mn^0 \cdot (m^{-4}n^4)^{-3}}$

90) $\dfrac{x^2y^2 \cdot xy^{-2}}{(x^4)^2}$

Answers to Summer Review (ID: 1)

1) 8

2) 10

3) -4

4) -29

5) $-\frac{247}{360}$

6) $-\frac{7}{48}$

7) $2\frac{109}{490}$

8) $4\frac{13}{30}$

9) $-45x^2 - 18x$

10) $-4r^2 + 14r + 80$

11) $-6 - 94m - 24m^2$

12) $58n^2 - 8n$

13) $2\frac{25}{36} + 2\frac{76}{81}b$

14) $3\frac{5}{8} - 4\frac{9}{10}n$

15) 3

16) Undefined

17) $\frac{3}{4}$

18) $\frac{5}{7}$

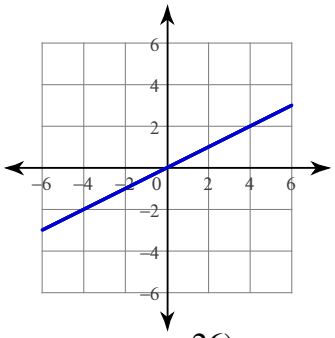
19) $\frac{4}{3}$

20) $\frac{3}{4}$

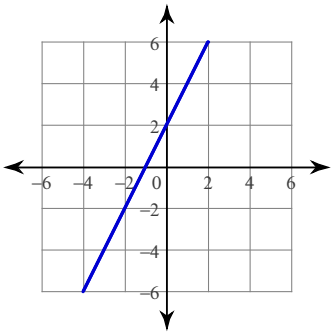
21) 3

22) $-\frac{1}{2}$

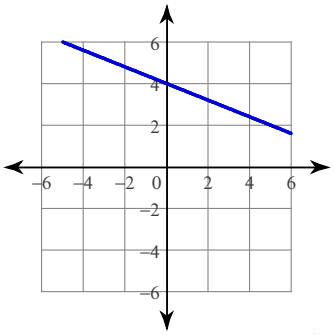
23)



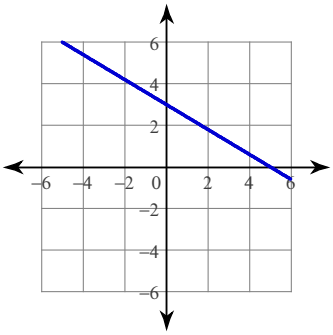
24)



25)



26)



27) $y = -3x - 4$

28) $7x - 4y = 8$

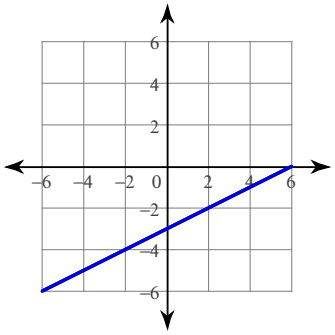
29) $x + 5y = -5$

30) $y = \frac{3}{2}x + 1$

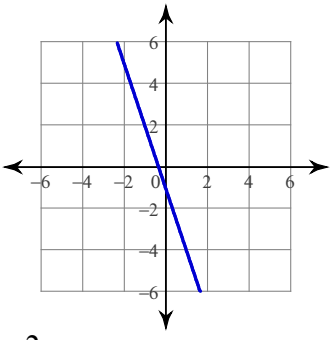
31) $y = -\frac{4}{3}x - 4$

32) $y = -\frac{1}{2}x - \frac{9}{2}$

33)



34)

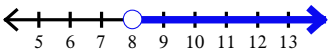


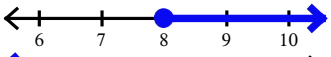
35) $\frac{1}{3}$

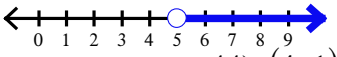
36) $\frac{7}{10}$

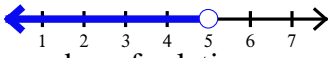
37) $-2 - r$

38) $8\frac{1}{20}x + 21\frac{3}{5}$

39) $n > 8$: 

40) $b \geq 8$: 

41) $n > 5$: 

42) $v < 5$: 

43) $(3, 2)$

44) $(4, 1)$

45) Infinite number of solutions

46) $(-3, 4)$

47) $(2, 2)$

48) $(-1, -1)$

49) $(-5, -3)$

50) $(0, -4)$

51) 10 ducks and 5 oxen

52) 2 vans and 7 buses

53) 5 cars and 7 buses

54) 4 ducks and 12 goats

55) 8 Riyals

56) \$3

57) 4 in

58) 1 in

59) 7.5

60) 4.5

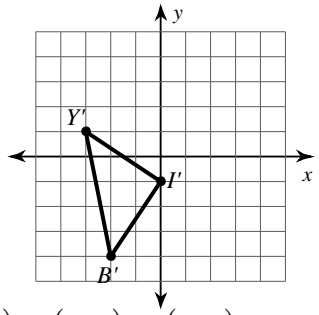
61) 5.1

62) 13.3

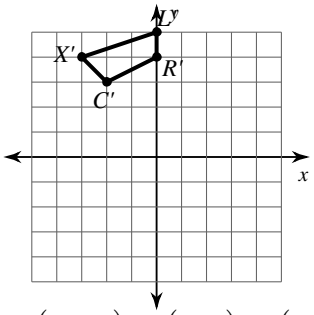
63) 6.9

64) 9.5

65)



66)



67) $T'(2, -2)$, $U'(-1, 2)$, $S'(0, 3)$, $E'(4, 0)$

68) $D'(1, -3)$, $E'(0, 1)$, $B'(5, 0)$

69) $Z'(4, 0)$

70) $S'(2, -1)$, $Z'(4, -5)$, $I'(5, -2)$

71) 1.857×10^{-6}

72) 2.04×10^{0}

73) 1.4×10^{6}

74) 2.1×10^{-3}

75) 7.4×10^{-4}

76) 5.1×10^{2}

77) $(-2)^5$

78) 7^8

79) $\frac{1}{(-6)^2}$

80) 5^3

81) $\frac{1}{3^{13}}$

82) $(-3)^4$

83) $\frac{1}{2^2}$

84) 4^9

85) $(-3)^3$

86) $(-2)^6$

87) $\frac{1728b^{30}}{a^{21}}$

88) $\frac{24x^4}{y^4}$

89) $\frac{n^{13}}{m^{12}}$

90) $\frac{1}{x^5}$